

REMARKS/ARGUMENTS***Brief Summary of Status***

Claims 1-63 are pending in the application.

Claims 1-63 are rejected.

Claim Objections

In the above-referenced office action, the Examiner asserts the following:

“2. Claims 35, 53 and 54 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.” (office action, Part of Paper No./Mail Date 20080718, p. 2)

The Applicant has amended certain of the claims.

The Applicant has canceled dependent claims 53 and 54.

In light of such amendments, the Applicant respectfully requests that the Examiner withdraw these objections.

35 U.S.C. § 102

In the above-referenced office action, the Examiner asserts the following:

“4. Claims 1, 2, 4-8, 10, 14, 16, 18-21, 23, 27, 29, 30, 33, 35, 36, 38-42, 44, 48, 50, 52-55, 58 and 62 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 6,771,660 to Bourlas et al.” (office action, Part of Paper No./Mail Date 20080718, p. 3)

The Applicant respectfully traverses.

The Applicant has amended certain of the claims.

The Applicant respectfully points out that, in order to support a proper rejection under 35 U.S.C. §102, a singular reference must teach and disclose each and every limitation of the subject matter as claimed by the Applicant. If the singular reference fails to teach and disclose each and every limitation of the subject matter as claimed by the Applicant, the rejections under 35 U.S.C. § 102 should be withdrawn.

The Applicant respectfully asserts that Bourlas fails to teach and disclose each and every element of the subject matter as claimed by the Applicant in the independent claims rejected above.

The Applicant respectfully asserts that Bourlas fails to teach and disclose each and every element of the subject matter as claimed by the Applicant in these rejected claims.

The Applicant respectfully points out that a piconet, as described in the Applicant's originally filed specification (including figures) and recited in the Applicant's preamble of independent claims 1 and 16, have a relatively small range of operation (e.g., p. 2 of Applicant's specification, "piconets typically operate within a region having a radius of up to approximately 10 meters", which is approximately 30 feet or so).

Bourlas' FIG. 1 seems to show a "base station 106 and an active antenna array 108" that services multiple "customer premises equipment (CPE) 110 positioned at fixed customer sites 112 throughout the area of the cell 102." Bourlas' FIG. 1 seems to show multiple buildings and a very tall "active antenna array 108" that seems to stand well above a smaller building that is "base station 106". The Applicant respectfully believes that the range of operation of such a "cell 102" in Bourlas' FIG. 1 appears to be well beyond "a region having a radius of up to approximately 10 meters".

The Applicant respectfully believes that Bourlas' FIG. 1 seems to depict a wireless cellular network. Moreover, the terms "piconet", "personal area network (PAN)", or variants thereof, do not even appear in Bourlas. The Applicant respectfully believes that one having skill in the art to which the invention pertains would most likely not consult Bourlas given the lack of any reference to such subject matter (e.g., "piconet", "personal area network (PAN)", etc.).

Also, in the Examiner-identified FIG. 5 of Bourlas and in the Examiner-identified col. 10, lines 39-45 of Bourlas, Bourlas explicitly teaches and discloses that the PHY layer 508 is not coupled to the MAC layers 502, 504. As can be seen, there is particularly a "transmission convergence (TC) layer 506" that ensures that the PHY layer 508 and the MAC layers 502, 504 are specifically not coupled to each other; Bourlas explicitly teaches and discloses that they are de-coupled.

Bourlas teaches and discloses:

“The present data transportation and synchronization invention relies upon fixed length transmission convergence/physical TC/PHY packets to transport variable length MAC packets that are relatively decoupled from the physical (PHY) layer 508. The transmission convergence (TC) layer 506 provides a de-coupling means between the MAC layers 502, 504 and the PHY layer 508.” (Bourlas, col. 10, lines 39-45, emphasis added)

At a very minimum, the “MAC layers 502, 504 and the PHY layer 508” of Bourlas are not communicatively coupled together in these Examiner-identified portions of Bourlas (i.e., they are “decoupled” as provided by the “transmission convergence (TC) layer 506” that serves as a “de-coupling means between the MAC layers 502, 504 and the PHY layer 508”).

In contradistinction, the Applicant’s claimed PHY and MAC are communicatively coupled to one another.

The very operation of Bourlas appears to necessitate that the “MAC layers 502, 504 and the PHY layer 508” are “decoupled” from one another (e.g., as effectuated by the “transmission convergence (TC) layer 506”).

Just above another of the Examiner-cited portions of Bourlas, Bourlas teaches and discloses:

“Mapping of MAC Entities to PHY Elements

In one embodiment of the present invention, the BS LL-MAA performs all allocation and mapping of the available bandwidth of a physical channel based on the priority and quality of services requirements of requests received from the higher communication protocol layers. Additionally, the availability of bandwidth is preferably based on the modulation required to achieve acceptable bit error rates (BER) between the BS and the individual CPEs. The BS MAC preferably uses information from the PHY regarding signal quality to determine the modulation required for a particular CPE and, therefore, the bandwidth that is available. Once the BS LL-MAA has allocated uplink bandwidth to the CPEs, each CPE's LL-MAA, in turn, allocates that bandwidth to the uplink requests it has outstanding.” (Bourlas, col. 14, lines 39-54, emphasis added)

The BS LL-MAA is the base station's Low Level Media Access Arbitration (LL-MAA) layer 504 that is part of the two-layered MAC (that includes MAC layers 502, 504). Bourlas explicitly teaches and discloses that this BS LL-MAA layer 504 performs "all allocation and mapping of the available bandwidth of a physical channel" and that this is "based on the priority and quality of services requirements of requests received from the higher communication protocol layers".

The only information from the PHY in this Examiner-cited portion of Bourlas regards "signal quality". This "signal quality" is used to dictate "modulation", which in turn dictates "the bandwidth that is available".

However, "all allocation and mapping of the available bandwidth of a physical channel" within Bourlas is performed "based on the priority and quality of services requirements of requests received from the higher communication protocol layers".

The BS LL-MAA performs its functions based on requests from the "higher communication protocol layers", and not any processed, assessed information from any link quality intelligence gathering of the PHY.

Again, "all" of the allocation and mapping of the available bandwidth is performed by the BS LL-MAA of Bourlas, and this is "based on the priority and quality of services requirements of requests received from the higher communication protocol layers".

One again, the very connectivity of the "MAC layers 502, 504 and the PHY layer 508" of Bourlas is distinct and different (i.e., "decoupled" from one another) than that of the Applicant's claimed PHY and MAC that are communicatively coupled to one another. Again, the very operation of Bourlas appears to necessitate that the "MAC layers 502, 504 and the PHY layer 508" are "decoupled" from one another (e.g., as effectuated by the "transmission convergence (TC) layer 506").

The teaching and disclosure of a "de-coupling means between the MAC layers 502, 504 and the PHY layer 508" teaches away from the subject matter as claimed by the Applicant.

At a minimum, given that the very connectivity of the Examiner-identified elements of Bourlas are not connected in a similar manner as the Applicant's claimed subject matter, the Applicant respectfully asserts that Bourlas fails to teach and disclose

each and every element of the subject matter as claimed by the Applicant in these rejected claims.

Again, Bourlas explicitly teaches and discloses that the “MAC layers 502, 504 and the PHY layer 508” are “decoupled” from one another (i.e., not communicatively coupled as the Examiner asserts).

Also, the Examiner-identified col. 6, lines 26-33 of Bourlas (which the Examiner associates with the Applicant’s claimed intelligence gathering functionality of a PHY) seems to deal with the operation of the MAC, and does not deal with any link quality intelligence gathering functionality of a PHY.

Bourlas teaches and discloses:

“In the system shown in FIG. 1, the MAC is typically executed by software processed by the base stations 106 (in some embodiments, the software may execute on processors both in the base stations and the CPE). The base stations 106 receive requests for transmission rights and grant these requests within the time available taking into account the priorities, service types, quality of service and other factors associated with the CPEs 110.” (Bourlas, col. 10, lines 39-45, emphasis added)

Then again, within the Examiner-identified col. 10, lines 39-45 of Bourlas, Bourlas explicitly teaches and discloses that the “MAC layers 502, 504 and the PHY layer 508” of Bourlas are “decoupled” from one another.

With respect to the Applicant’s dependent claim 14, the Applicant respectfully points out that the Examiner-identified col. 10, lines 48-50 of Bourlas does not appear to teach and disclose that the MAC is directing the PHY to assess a plurality of operational parameters. As cited above, “The BS MAC preferably uses information from the PHY regarding signal quality to determine the modulation required for a particular CPE and, therefore, the bandwidth that is available”. The Applicant respectfully points out that merely using “information from the PHY” is not the same as the MAC directing a sub-component of the PHY (i.e., the link quality intelligence gathering functionality) to assess the plurality of operational parameters. At a minimum, some control signal would need to be provided from the “MAC layers 502, 504” to a sub-component of the “PHY layer 508” (i.e., to a link quality intelligence gathering functionality) therein. Given that these two layers are not even coupled to one another (i.e., because of the “de-coupling means”

between the MAC layers 502, 504 and the PHY layer 508”), there clearly is not signal provided there between.

Also, with respect to the independent method claims 35 and 50, information from a PHY in Bourlas is not passed to a MAC, but rather instead to a “transmission convergence (TC) layer 506” that ensures that the “MAC layers 502, 504 and the PHY layer 508” are “decoupled” from one another.

Bourlas explicitly teaches and discloses that both uplink and downlink packets from of the MAC are not even compatible with the air interface (e.g., physical layer interface), and as such, the “transmission convergence (TC) layer 506” must modify them to make them compatible.

Bourlas teaches and discloses:

“In the preferred embodiment of the present invention, the MAC uplink and downlink packets interface with the physical layer 508 (FIG. 5) through the TC layer 506 (FIG. 5). The TC layer 506 packages MAC messages into packets that are compatible with the air interface. The TC layer 506 distributes MAC messages across TC/PHY packets as required.” (Bourlas, col. 13, lines 62-67, emphasis added)

Clearly, there is not a direct providing of packets between the “MAC layers 502, 504 and the PHY layer 508” of Bourlas, because they are in fact “decoupled” from one another (i.e., the “transmission convergence (TC) layer 506” is interposed there between).

As such, the Applicant respectfully asserts that Bourlas fails to teach and disclose each and every element of the subject matter as claimed by the Applicant in these rejected claims.

In view of at least these comments made above, the Applicant respectfully believes that these independent claims rejected above are patentable over Bourlas.

The Applicant respectfully believes that these dependent claims rejected above, being further limitations of the subject matter as claimed in allowable independent claims, respectively, are also allowable.

As such, the Applicant respectfully requests that the Examiner withdraw the rejections of these claims.

35 U.S.C. § 103

In the above-referenced office action, the Examiner asserts the following:

“4. Claims 3, 17, 31, 37 and 51 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,771,660 to Bourlas et al in view of U.S. Patent No. 6,999,432 to Zhang et al.” (office action, Part of Paper No./Mail Date 20080718, p. 10)

The Applicant respectfully traverses.

The Applicant has amended certain of the claims.

The comments made above with respect to Bourlas are also applicable here.

The Applicant respectfully believes that the inclusion of Zhang fails to overcome the deficiencies of Bourlas.

As mentioned above, the MAC of Bourlas receives “requests received from the higher communication protocol layers”. As such, the Applicant respectfully believes that one having skill in the art to which the invention pertains would not consider Bourlas to provide information up any “higher communication protocol layers”, but rather would properly characterize Bourlas as teaching and disclosure to receive information from the “higher communication protocol layers”.

As such, the Applicant respectfully believes that one having skill in the art to which the invention pertains would not combine Bourlas with a reference that does provide information up any “higher communication protocol layers” (since Bourlas teaches and discloses to receive information from the “higher communication protocol layers”).

The Applicant respectfully believes that the Applicant’s independent claims are allowable over Bourlas in view of Zhang.

The Applicant respectfully asserts that Bourlas and Zhang, when considered individually or together, fails to teach and disclose the subject matter as claimed by the Applicant in these claims.

The Applicant respectfully believes that these dependent claims rejected above, being further limitations of the subject matter as claimed in allowable independent claims, respectively, are also allowable.

As such, the Applicant respectfully requests that the Examiner withdraw the rejections of these claims.

In the above-referenced office action, the Examiner asserts the following:

“6. Claims 9, 15, 22, 28, 34, 43, 49, 56, 57 and 63 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,771,660 to Bourlas et al in view of U.S. Publication No. 2003/0054767 to Mandhyan et al.” (office action, Part of Paper No./Mail Date 20080718, p. 11)

The Applicant respectfully traverses.

The Applicant has amended certain of the claims.

The comments made above with respect to Bourlas are also applicable here.

The Applicant respectfully believes that the inclusion of Mandhyan fails to overcome the deficiencies of Bourlas.

Among other limitations, the Applicant respectfully points out that the Applicant’s dependent claim 9 claims “the at least one additional device is a PNC (piconet coordinator)”.

On page 11 of the office action, the Examiner asserts that “the at least one additional device is a base station (base station 106).”

Again, the Applicant respectfully points out that a piconet, as described in the Applicant’s originally filed specification (including figures) and recited in the Applicant’s preamble of independent claims 1 and 16, have a relatively small range of operation (e.g., p. 2 of Applicant’s specification, “piconets typically operate within a region having a radius of up to approximately 10 meters”, which is approximately 30 feet or so). A PNC (piconet coordinator), as claimed by the Applicant, operates within such a piconet.

Bourlas’ FIG. 1 seems to show a “base station 106 and an active antenna array 108” that services multiple “customer premises equipment (CPE) 110 positioned at fixed customer sites 112 throughout the area of the cell 102.” Bourlas’ FIG. 1 seems to show multiple buildings and a very tall “active antenna array 108” that seems to stand well above a smaller building that is “base station 106”. The Applicant respectfully believes that the range of operation of such a “cell 102” in Bourlas’ FIG. 1, and a such the “base station 106” of Bourlas, appears to be well beyond “a region having a radius of up to approximately 10 meters”.

The Applicant respectfully believes that the Applicant's independent claims are allowable over Bourlas in view of Mandhyan.

The Applicant respectfully asserts that Bourlas and Mandhyan, when considered individually or together, fails to teach and disclose the subject matter as claimed by the Applicant in these claims.

The Applicant respectfully believes that these dependent claims rejected above, being further limitations of the subject matter as claimed in allowable independent claims, respectively, are also allowable.

As such, the Applicant respectfully requests that the Examiner withdraw the rejections of these claims.

In the above-referenced office action, the Examiner asserts the following:

“7. Claims 11, 24, 45 and 59 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,771,660 to Bourlas et al in view of U.S. Patent No. 7,391,714 to Blasco Claret et al.” (office action, Part of Paper No./Mail Date 20080718, p. 14)

The Applicant respectfully traverses.

The Applicant has amended certain of the claims.

The comments made above with respect to Bourlas are also applicable here.

The Applicant respectfully believes that the inclusion of Blasco Claret fails to overcome the deficiencies of Bourlas.

The Applicant respectfully believes that the Applicant's independent claims are allowable over Bourlas in view of Blasco Claret.

The Applicant respectfully asserts that Bourlas and Blasco Claret, when considered individually or together, fails to teach and disclose the subject matter as claimed by the Applicant in these claims.

The Applicant respectfully believes that these dependent claims rejected above, being further limitations of the subject matter as claimed in allowable independent claims, respectively, are also allowable.

As such, the Applicant respectfully requests that the Examiner withdraw the rejections of these claims.

In the above-referenced office action, the Examiner asserts the following:

“8. Claims 12, 25, 46 and 60 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,771,660 to Bourlas et al in view of U.S. Patent No. 7,330,433 to Shao et al.” (office action, Part of Paper No./Mail Date 20080718, p. 15)

The Applicant respectfully traverses.

The Applicant has amended certain of the claims.

The comments made above with respect to Bourlas are also applicable here.

The Applicant respectfully believes that the inclusion of Shao fails to overcome the deficiencies of Bourlas.

The Applicant respectfully believes that the Applicant’s independent claims are allowable over Bourlas in view of Shao.

The Applicant respectfully asserts that Bourlas and Shao, when considered individually or together, fails to teach and disclose the subject matter as claimed by the Applicant in these claims.

The Applicant respectfully believes that these dependent claims rejected above, being further limitations of the subject matter as claimed in allowable independent claims, respectively, are also allowable.

As such, the Applicant respectfully requests that the Examiner withdraw the rejections of these claims.

In the above-referenced office action, the Examiner asserts the following:

“9. Claims 13, 26, 32, 47 and 61 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,771,660 to Bourlas et al in view of U.S. Patent No. 5,561,666 to Christensen et al.” (office action, Part of Paper No./Mail Date 20080718, p. 17)

The Applicant respectfully traverses.

The Applicant has amended certain of the claims.

The comments made above with respect to Bourlas are also applicable here.

The Applicant respectfully believes that the inclusion of Christensen fails to overcome the deficiencies of Bourlas.

The Applicant respectfully believes that the Applicant's independent claims are allowable over Bourlas in view of Christensen.

The Applicant respectfully asserts that Bourlas and Christensen, when considered individually or together, fails to teach and disclose the subject matter as claimed by the Applicant in these claims.

The Applicant respectfully believes that these dependent claims rejected above, being further limitations of the subject matter as claimed in allowable independent claims, respectively, are also allowable.

As such, the Applicant respectfully requests that the Examiner withdraw the rejections of these claims.

The Applicant respectfully believes that claims 1-63 are in condition for allowance and respectfully requests that they be passed to allowance.

The Examiner is invited to contact the undersigned by telephone or facsimile if the Examiner believes that such a communication would advance the prosecution of the present U.S. utility patent application.

RESPECTFULLY SUBMITTED,
By: /SXShort/ Reg. No. 45,105
Shayne X. Short, Ph.D., Reg. No. 45,105
Direct Phone: (512) 825-1145
Direct Fax No. (888) 456-7824

GARLICK HARRISON & MARKISON
ATTORNEYS AT LAW
P.O. Box 160727
AUSTIN, TEXAS 78716-0727
TELEPHONE (512) 825-1145 / FACSIMILE (888) 456-7824 or (888) 711-8305